

4. The method of claim 1,

the first station sends the real-time media signal to an intermediate entity, and the intermediate entity sends the real-time media signal along its way toward the second station;

5 buffering the initial real-time media signal until a transmission path exists to send the initial real-time media signal along its way toward the second station comprises buffering the initial real-time media signal in the intermediate entity until a transmission path exists to send the initial real-time media signal from the intermediate entity to the second station; and

10 sending the initial real-time media signal along its way toward the second station comprises sending the initial real-time media signal from the intermediate entity to the second station.

15 5. The method of claim 4,

wherein the intermediate entity comprises a communication server that establishes respective RTP legs with the first station and the second station and bridges the RTP legs together; and

20 wherein buffering the initial real-time media signal in the intermediate entity until a transmission path exists to send the initial real-time media signal from the intermediate entity to the second station comprises:

buffering the initial real-time media signal in the communication server until an RTP leg has been established between the communication server and the second station.

6. The method of claim 1, wherein the first station is a mobile station.

25 7. The method of claim 1, wherein the real-time media signal comprises a real-time media signal selected from the group consisting of voice and video.

8. A method of initiating a push-to-talk (PTT) communication session between an initiating mobile station and at least one terminating mobile station, the method comprising:

30 the initiating mobile station receiving and buffering an initiating user's speech signal;

the initiating mobile station working to set up an initiating communication leg with a PTT server; and

responsive to establishment of the initiating communication leg with the PTT server, the initiating mobile station sending initiating user's speech signal along to the PTT server for transmission in turn to the at least one terminating mobile station.

9. The method of claim 8, wherein the initiating mobile station working to set up an initiating communication leg with the PTT server comprises:

the initiating mobile station sending a SIP INVITE to the PTT server.

10. The method of claim 8, further comprising:

the PTT server receiving and buffering the initiating user's speech signal;

the PTT server working to set up at least one terminating communication leg with the at least one terminating mobile station; and

response to establishment of the at least one terminating leg with the at least one terminating mobile station, the PTT server sending the initiating user's speech signal along to the at least one terminating mobile station.

11. The method of claim 8, wherein the real-time media signal comprises a real-time media signal selected from the group consisting of voice and video.

12. A method of reducing call setup latency in a push-to-talk (PTT) communication system, the method comprising:

an initiating mobile station receiving a user's instruction to initiate a PTT session, and the initiating mobile station then receiving and buffering a speech signal provided by the user;

the initiating mobile station sending a SIP INVITE to a PTT server in an effort to set up an initiating RTP leg between the initiating mobile station and the PTT server;

responsive to establishment of the initiating RTP leg between the initiating mobile station and the PTT server, the initiating mobile station sending the speech signal to the PTT server for transmission in turn to at least one terminating mobile station.

13. The method of claim 12, further comprising:

switching the at least one terminating mobile station from operation at a first paging frequency to operation at a second paging frequency higher than the first paging frequency, so as to more quickly establish a radio link with the at least one terminating mobile station.

5

14. A method of reducing call setup latency in a push-to-talk (PTT) communication system, the method comprising:

a PTT server receiving and buffering an initiating user's speech signal;

the PTT server working to establish a transmission path to send the user's speech signal along to a terminating mobile station;

10

responsive to establishment of the transmission path, the PTT server sending the user's speech signal along to the terminating mobile station.

15. The method of claim 13, further comprising:

15

switching the at least one terminating mobile station from operation at a first paging frequency to operation at a second paging frequency higher than the first paging frequency, so as to more quickly establish a radio link with the at least one terminating mobile station.

16. A communication station comprising:

20

a processor;

data storage;

machine language instructions stored in the data storage and executable by the processor to carry out functions comprising:

receiving a user's instruction to invoke a real-time media communication session

25

with another user;

receiving a real-time media signal from the user, and buffering the real-time media signal until a transmission path exists to send the real-time media signal along its way toward the other user;

responsive to establishment of the transmission path, sending the real-time media

30

signal along its way toward the other user.

17. A push-to-talk communication server comprising:

a processor;

data storage;

machine language instructions stored in the data storage and executable by the processor

5 to carry out functions comprising:

receiving and buffering a real-time media signal from an initiating mobile station;

establishing an RTP communication leg with a terminating mobile station; and

responsive to establishment of the RTP leg with the terminating mobile station,

10 sending the buffered real-time media signal along its way toward the terminating mobile station.

McDONNELL BOEHNEN  
HULBERT & BERGHOFF  
300 SOUTH WACKER DRIVE  
CHICAGO, ILLINOIS 60606  
TELEPHONE (312) 913-0001